

1988

4-H 265 Foods for the Future 4

Follow this and additional works at: <http://digitalcommons.unl.edu/a4hhistory>

"4-H 265 Foods for the Future 4" (1988). *Nebraska 4-H Clubs: Historical Materials and Publications*. 395.
<http://digitalcommons.unl.edu/a4hhistory/395>

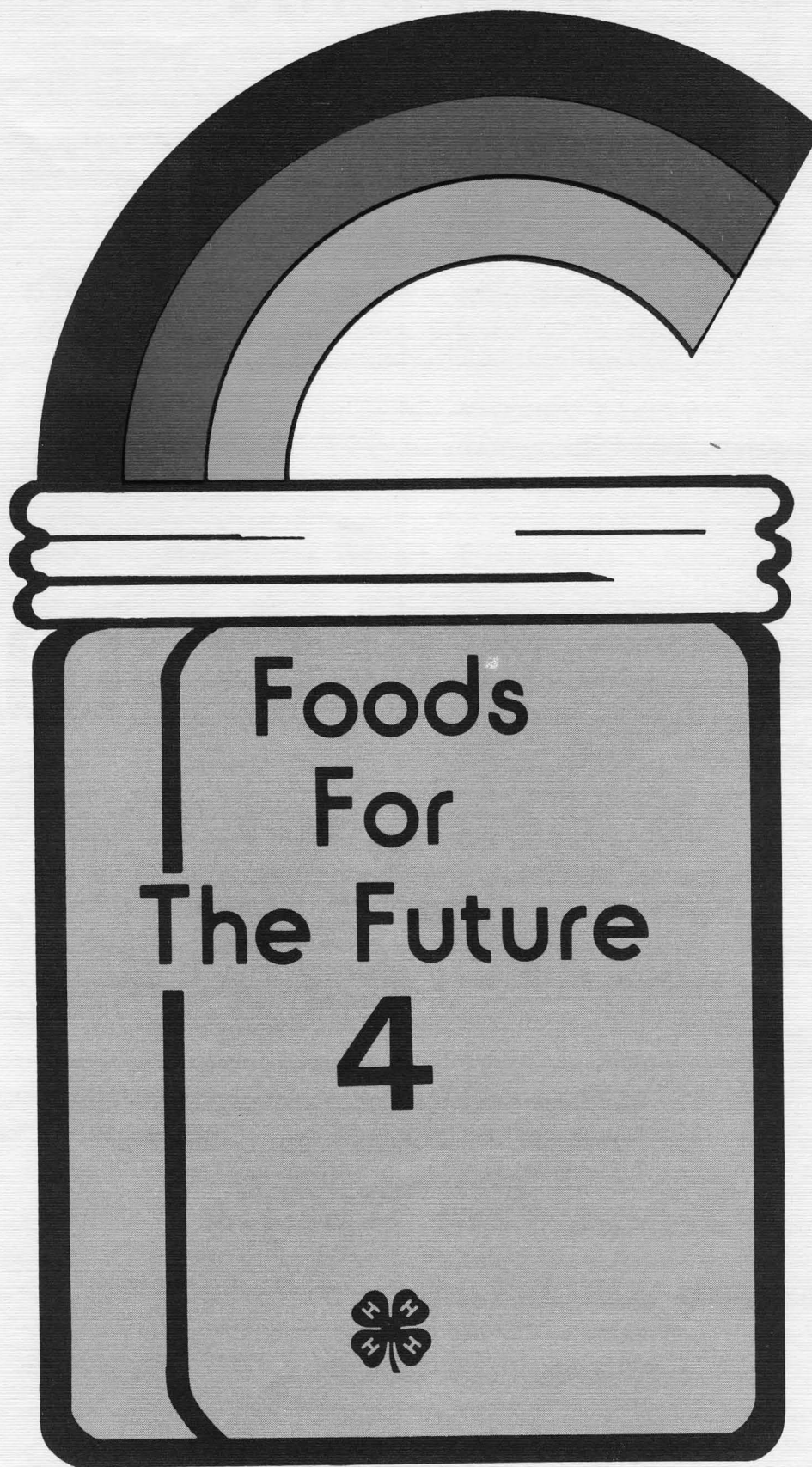
This Article is brought to you for free and open access by the 4-H Youth Development at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska 4-H Clubs: Historical Materials and Publications by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

CYT
S
533
FL6 N42
no. 265

R02178 32575

1988

Nebraska Cooperative Extension Service 4-H 265



Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Leo E. Lucas, Director of Cooperative Extension Service, University of Nebraska, Institute of Agriculture and Natural Resources.



The Cooperative Extension Service provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.

WELCOME

Foods for the Future was written by Eloise Christianson, M.S. and Laurel Branen, M.S., R.D. under contract with the University of Nebraska.

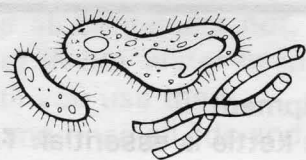
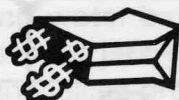
What You Will Learn

- ☐ New words
- ☐ About the essential ingredients needed to make jellied products
- ☐ How to test for pectin content in different fruit juices

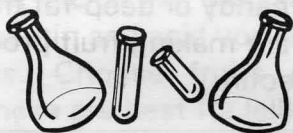
What You Will Do

- ☐ Make uncooked jam
- ☐ Make jam
- ☐ Make preserves, conserves and marmalades
- ☐ Make jelly
- ☐ Make jam and jelly without added pectin
- ☐ Evaluate your products
- ☐ Answer Quiz Time questions

DEFINITIONS

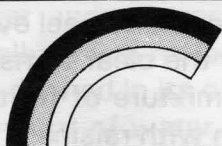


WORDS TO KNOW



KNOW-HOWS

HOW-TOS



..... QUIZ TIME

HISTORICAL FOOTNOTES — Interesting historical facts about food preservation and those foods that we like to preserve.

YOU'RE THE CONSUMER — Important information you need to make wise consumer decisions.

KITCHEN SAFETY — Hints on how to work in the kitchen safely.

FOOD SAFETY — Hints on how to work with food to keep it safe to eat.

WORDS TO KNOW — New words and their meanings to be used in a chapter.

I DON'T GET IT? — A question/answer format for questions you may have.

EXPERIMENTS — Activities that help you understand what happens to food under varying conditions.

KNOW-HOWS — Mini-projects that you need to know how to do before you can complete the major project.

HOW-TOS — Major project that tells you how to preserve your food.

A RAINBOW OF SERVING IDEAS — Suggestions on how you can use your preserved food.

QUIZ TIME — A fun time to answer some questions on what you have learned.

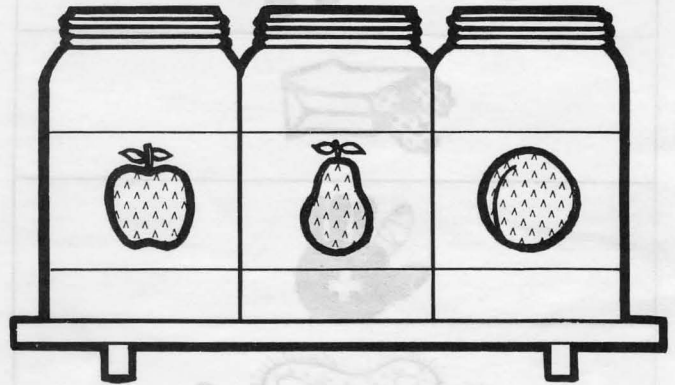
Jellied Fruit Specialties: Getting Started

In the following chapters you will learn how to make a variety of jellied fruit specialties. These include jam, jellies and preserves. There is a lot of general information you need to know before you begin. For that reason, this chapter does not include a specific jam or jelly to make. Instead it includes an experiment, which you'll see later. In each of the following five chapters you will have a specific product to make and evaluate.

The directions for each recipe will not include information on making jellied fruit specialties **without** pectin. There is a higher success rate when making them with pectin. For those of you who would like that extra challenge, Chapter VI has been included for making jams and jellies without pectin.

Nutritive Value of Jelly

Because of its high sugar content, jelly is mainly a source of calories and should be used sparingly by persons on weight control diets. One tablespoon of most jellies contains 50 calories.



Special Equipment

- A large kettle is essential. To bring the mixture to a full boil without boiling over, use an 8 or 10 quart kettle with a broad, flat bottom.
- Use a jelly bag or fruit press for extracting fruit juice for jellies. Make the bag of several thicknesses of closely woven cheesecloth to strain pressed juice. A special stand or colander holds the jelly bag.
- A jelly, candy or deep-fat thermometer helps if you are making fruit products without added pectin.

WORDS TO KNOW

Jelly - Made from fruit juice. Should be clear and sparkling with a characteristic color and flavor. When removed from the glass, it should hold its shape and quiver. It should cut easily with a sharp edge.

Jam - Made from crushed or ground fruit. It tends to hold its shape but is generally less firm than jelly.

Preserves - Whole, small fruits or large pieces of fruit in a thick syrup that is often slightly jellied. The fruit retains its shape,

and is clear, shiny, tender and plump.

Butters - Made by cooking fruit pulp to a thick consistency that will spread easily.

Marmalades - Soft jellies containing small pieces of fruit or citrus peel evenly suspended throughout the clear transparent jelly.

Conserve - A mixture of fruits of soft consistency, often with raisins and nuts added.

Pectin - Found naturally in most fruits. When combined with sugar and acid it forms a gel. It is also available commercially in pure form.

Containers

- For jellies use glasses or straight-sided containers that will make an attractive mold. See Figure 1.
- For jams, preserves, conserves and marmalades, use canning jars with canning lids that can be tightly sealed and processed. These products are **always** processed using the boiling-water bath.
- Get glasses or jars ready before you start to make the jellied product. Wash containers in warm, soapy water and rinse with hot water. If you have a dishwasher, you can wash jelly containers and keep them hot before you use them.
- Sterilize jelly containers with boiling water. Keep all containers hot, either in a slow oven or in hot water or in your dishwasher, until you use them.
- Wash and rinse all lids and bands.

Essential Ingredients

Fruit, pectin, sugar and acid are the four essential ingredients needed to make a jellied fruit specialty.

FRUIT

Fresh Fruit: Fruit gives each product its characteristic flavor and furnishes at least part of the pectin and acid you need for successful gels. Choose fruits of flavorful varieties. These are best for jellied products because the fruit flavor is diluted by the large proportion of sugar used for proper texture and good keeping quality.

Canned, Frozen or Dried Fruit: You can use frozen or canned fruit or fruit juice for jellied products. It is better to use fruit or juice which was canned or frozen without added sugar. If sweetened, note the amount of sugar and subtract it from the amount in the jelly or jam recipe. It is best to use fruit that is canned in its own juice with only a small amount of water.

You can also use unsweetened commercially canned or frozen fruit or juice to make jellied products. Concentrated frozen juices make very flavorful jellies.

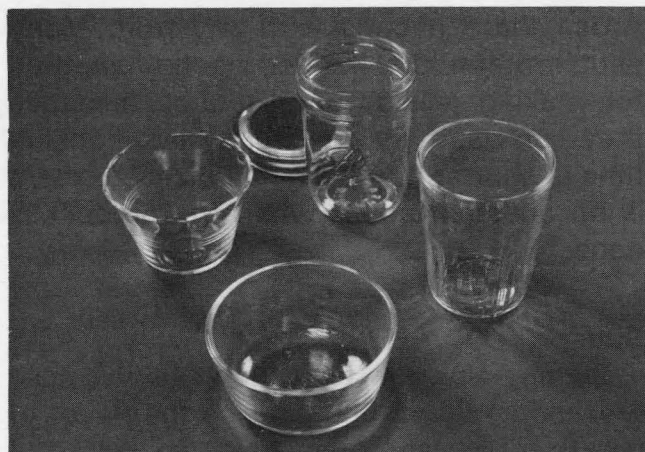


Figure 1



Figure 2

Pectin

Pectin is an essential ingredient needed for its gelling properties. The pectin content is highest in underripe fruit, and decreases as the fruit becomes fully ripe. All fruits contain some pectin which is concentrated in the skins and cores. Apples, crabapples, gooseberries, some plums, and high bush cranberries usually contain enough pectin to form a pectin gel. Other fruits, such as strawberries, cherries or blueberries contain little pectin. They can be used for jelly **only** if combined with a fruit rich in pectin or when combined with a commercial pectin.

Commercial fruit pectins, which are made from apples or citrus fruits, are on the market in two forms - liquid and powdered. Either form works well when used in a recipe developed especially for that form. But, they are not interchangeable. See Figure 2.

Use these pectins with any fruit. Many people prefer the "added pectin" method for making jellied fruit products because they can use fully ripe fruit. Also, cooking time is shorter and is standardized so there is no question about when the product is done.

Sugar

Sugar helps gel formation, serves as a preserving agent, and adds to the flavor of jellied products. It also helps to keep the fruit firm, which is useful in the making of preserves. You can use beet or cane sugar with equal success.

Other sweeteners, such as corn syrup or honey can replace part of the sugar in jelly recipes, however, the flavor of the fruit may be overcome if too much honey or corn syrup is substituted. Also, your results may not be satisfactory if too much sugar is substituted.

Do not try to reduce the amount of sugar called for in traditional recipes. Reducing

the amount of sugar will interfere with gel formation and could result in a product where yeasts and molds may grow.

Acid

Acid is needed for flavor and gel formation. The amount of acid varies in different fruits. Like pectin, acid content is higher in underripe fruits and lower in ripe fruits. For fruits low in acid, add lemon juice or citric acid when making jellied products. If you use commercial fruit pectins, they contain some acid.



Try An Experiment

You may be interested in how much pectin is in the various fruits. You can get a rough estimate of the amount of natural pectin in fruit juice by using a Jelmeter.

- Juices rich in pectin form a solid jelly-like mass. Juices low in pectin form small particles of jelly-like material.

Jelmeter Test

- A jelmeter is a graduated glass tube with an opening at each end. The rate of flow of fruit juice through this tube gives a rough estimate of the amount of pectin in the juice. See Figure 3. The slower the flow, the higher the pectin content.

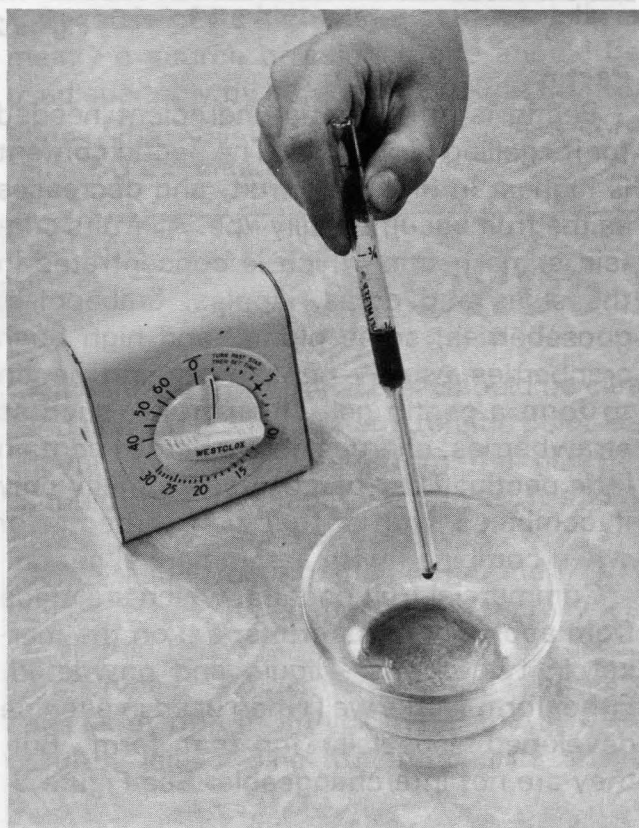
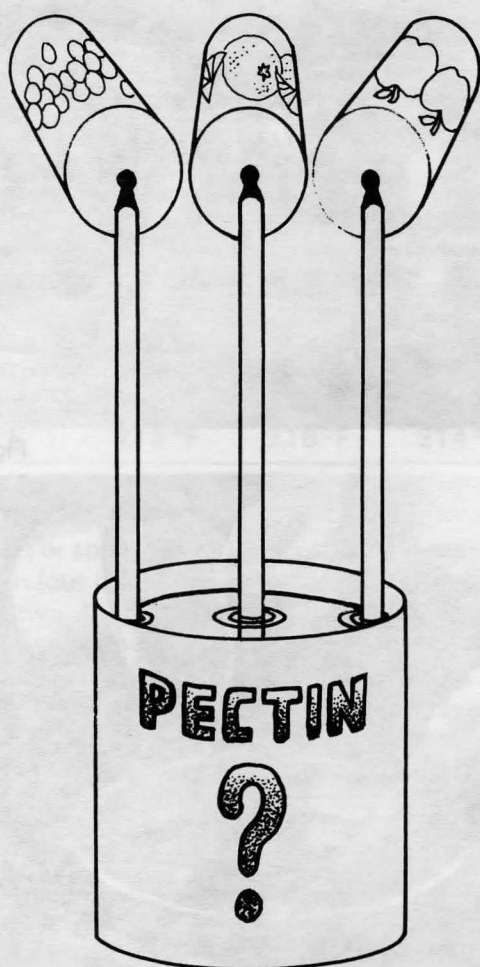


Figure 3

Which fruit juices did you find had enough pectin? List them on the lines below. For those fruit juices without enough pectin, try mixing the juice with those fruit juices with enough pectin.

Fruit Juice or Combination Juice	Adequate Pectin? Other Comments
Label	



..... QUIZ TIME

1. Match the jellied fruit specialty with its correct description.

- _____ Marmalade
- _____ Jelly
- _____ Preserve
- _____ Jam
- _____ Conserve
- _____ Butter

- A. Fruit retains its shape in this jellied fruit specialty
- B. Has a thick consistency that spreads easily
- C. Contains no pectin
- D. Made from crushed or ground fruit
- E. Often contains citrus peel
- F. Often has raisins and nuts
- G. It is high in acid content
- H. Made from fruit juice

2. Which statements are true about pectin?

- A. An essential ingredient needed for its gelling properties
- B. Is only found commercially in liquid or powdered form
- C. Strawberries, cherries, blueberries, pineapple, peaches and pears are high in pectin content.
- D. Commercial pectin is made from apples and citrus fruits
- E. Pectin content is highest in ripe fruit
- F. Fruits low in pectin can make successful jellies when combined with a fruit rich in pectin or a commercial pectin.

3. What causes jelly to be too soft?

- A. Too much juice in the mixture
- B. Too little sugar
- C. Mixture not acid enough
- D. Making too big a batch at one time
- E. Could be all of the above
- F. None of the above

Answers: 1. E, H, A, D, F, B; Refer to Words To Know; 2. A, D, F; 3. E

Uncooked Jam

You can make jellies and jams with the flavor of fresh fruit, **without** cooking them. This is because pectin will gel with a certain proportion of fruit, acid and sugar even if the ingredients are cold when you put them together.

Fruits vary in the amount of pectin they contain. You may add commercial pectin to cooked jellies and jams, but, you **must** add it to make uncooked jellies. The resulting gel molds or ferments if you let it stand more than a few days at room temperature. This is why you need to use frozen storage. If you are keeping the jellies or jams for only a short time, you can use refrigerator storage.

The recipe provided is for uncooked jam. Make several varieties if you wish. Evaluate them at your next meeting, page 19. Remember to store your uncooked jam properly.

HOW TO: make uncooked jam

You can make uncooked jams from a variety of fully ripe fruits. Follow the directions from the recipe below.

- Prepare the fruit. Crush or grind, depending on what kind you choose.
- Measure 3 cups of prepared fruit into a large bowl. Add 6 cups of sugar to the unsweetened fruit and stir. Let stand 20 minutes, stirring occasionally.
- If you use powdered pectin, boil 1 package of pectin and 1 cup of water for 1 minute, stirring constantly. (Directions may vary with the brand you use. Follow manufacturer's directions if they differ.) See Figure 4.
- Stir prepared pectin into sweetened fruit and stir about 2 minutes. See Figure 5.

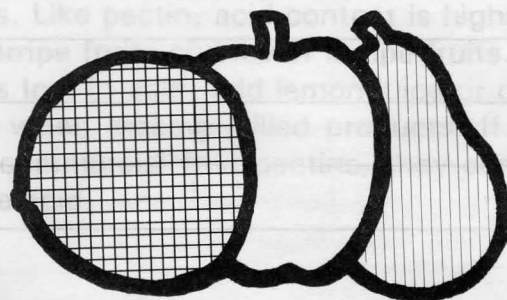


Figure 4



Figure 5

- If you use liquid pectin, you don't need to heat it. Add 1/2 bottle to 3 cups of sweetened fruit and stir for about 2 minutes. See Figure 6.

- Pour quickly into jelly glasses or suitable freezer containers with a 1/2 inch-headspace. Cover with lids. Let stand for 24 hours or until the jam sets. See Figure 7.

- Label.

- Store in the freezer at 0°F or lower. For use within 3 weeks, you can store uncooked jams in the refrigerator. If kept at room temperature, uncooked jams mold or ferment in a short time. See Figure 8.

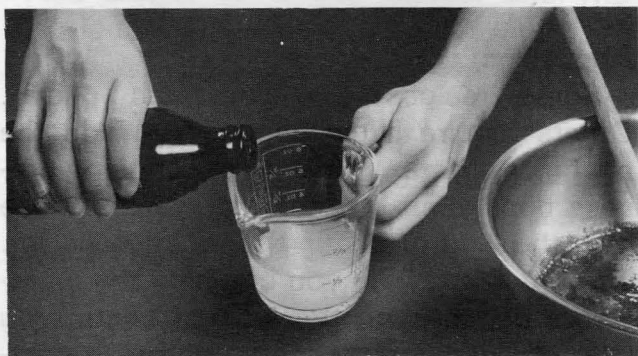


Figure 6



Figure 7

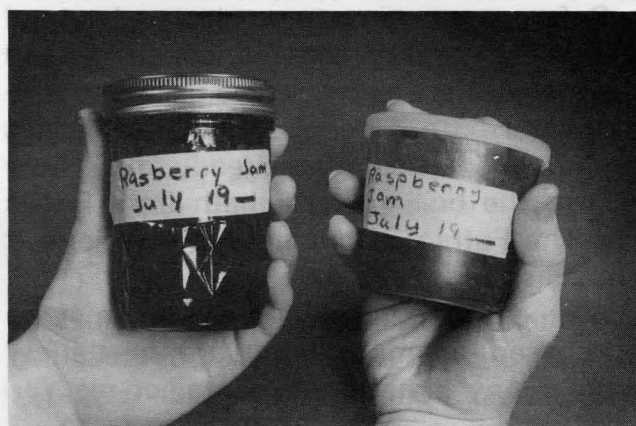


Figure 8

For Jams, Jellies, Marmelades and Conserves

Use the temperature test—Use a jelly or candy thermometer and boil until mixture reaches the following temperatures at altitudes of:

Sea Level	1000 Ft.	2000 Ft.	3000 Ft.	4000 Ft.	5000 Ft.	6000 Ft.	7000 Ft.	8000 Ft.
220 °F	218 °F	216 °F	214 °F	212 °F	211 °F	209 °F	207 °F	205 °F

Test for Doneness:

Sheet or spoon test—Dip a cool metal spoon into the boiling mixture. Raise the spoon about 12 inches above the pan (out of steam). Turn the spoon so the liquid runs off the side. The jelly or jam is done when the syrup forms two drops that flow together and sheet or hang off the edge of the spoon.

Remove from heat and quickly skin off foam. Fill sterile jars with the mixture. Use a measuring cup or ladle the mixture through a wide-mouthed funnel, leaving 1/4-inch headspace. Adjust lids and process. Add 1 additional minute per 1,000 feet above sea level.

Recommended process time for mixture with or without Added Pectin in a boiling-water canner.

Style of Pack	Jar Size	Process Time at Altitudes of		
		0-1000 ft.	1001-6000 ft.	6001-8000 ft.
Hot	Half-pints	5 min.	10	15

Making Cooked Jam

Jam is smooth and thick and has the natural color and flavor of the fruit from which it is made. It has a softer consistency than jelly. Because the products used to make jams contain fruit pulp or pieces of fruit, they tend to stick to the kettle during cooking and need constant stirring to prevent scorching.

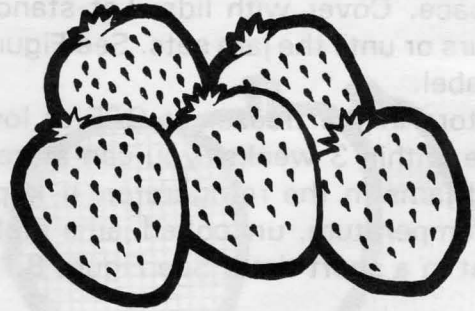
Before you begin you need to understand that jellies, jams, preserves, conserves and marmalades are all processed using the boiling-water bath. Uncooked jams and jellies are **not** processed. You already know how to use the boiling-water bath from Foods For The Future 2, but here is a review. It should sound familiar.

Inexpensive enamelware canners may be purchased at most hardware or variety stores. Any large metal container may be used if it:

- Is deep enough to allow for 1 to 2 inches of water above the tops of the jars, plus a little extra space for boiling.
- Has a close-fitting cover.
- Has a wire or wood rack with partitions to keep jars from touching each other or the bottom or sides of the container.

—Put filled home canning jars into a water-bath canner or a container filled with hot water. Add hot water if needed to bring water an inch or two over tops of jars. Bring water to a rolling boil and boil gently for 5 minutes.

—Remove jars from canner after processing. Cool away from drafts before storing.



About Pectin

Some recipes use powdered pectin. Others require liquid pectin. You add the pectin at different times in the cooking process depending on the kind you use. Use **only** the kind of pectin the recipe calls for. The order in which you combine the ingredients depends on the kind of pectin you use. Mix powdered pectin with the unheated fruit juice. Add liquid pectin after the juice and sugar have started to boil.

Boiling time is the same with either kind of pectin. Follow the boiling directions that come with the pectin you use. Accurate timing is important. Do not start to count time until the mixture reaches a full rolling boil, one that you cannot stir down. For the best flavor, use fully ripened fruit when you make jam with added pectin.

The recipe included is Rhubarb-Strawberry jam. If you have a favorite recipe or fruit in season that you prefer to use, use it. Also, if time permits, make several kinds of jam.



HOW TO: Make Jam

Rhubarb-Strawberry Jam

(With liquid pectin)

- 1 cup cooked red-stalked rhubarb
(about 1 pound rhubarb and 1/4 cup water)
- 2 1/2 cups crushed strawberries
(about 1 1/2 quart boxes)
- 6 1/2 cups sugar
- 1/2 bottle liquid pectin

- Wash rhubarb and slice thin or chop. Do not peel.
- Add water, cover and simmer until rhubarb is tender.
- Sort and wash fully ripe strawberries.
- Remove stems and caps.
- Crush berries.
- Measure prepared rhubarb and strawberries into kettle. Add sugar and stir well.
- Place on high heat and stirring constantly, bring quickly to a full rolling boil with bubbles over the entire surface.
- Boil hard for 1 minute, stirring constantly.
- Remove from heat and stir in pectin. Skim off foam.
- Fill containers using half-pint standard home canning jars, leaving 1/8-inch headspace.
- Wipe jar rims clean and seal with lids and process.
- Remove jars from canner after processing and cool away from drafts.
- To keep fruit from floating to the top, gently shake jars of jam occasionally as they cool.
- Label jars to show contents and date.

This recipe makes about 7 or 8 half-pint jars.

- Evaluate on page 19. If your product is too soft or too firm, read the following section for what you can do.

For Softer or Firmer Products

If you use fruit with average gelling properties, the jam or jelly made from standard recipes should be medium firm. However, because different lots of fruit are different in composition, it is not possible to have recipes that always give exactly the same results. If the first batch of jam or jelly from a particular lot of fruit is too soft or firm, change the proportions of fruit or the cooking time for the next batch.

In Products Made With Added Pectin

- For a softer jelly, use 1/4 to 1/2 cup **more** fruit or juice.
- For a firmer jelly, use 1/4 to 1/2 cup **less** fruit or juice.

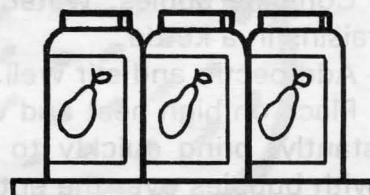
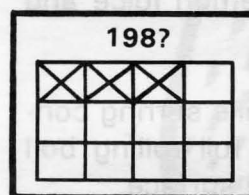
Softer jellies can sometimes be improved by recooking according to the directions given below. It is best to recook only 4 to 6 cups of jelly at one time.

TO REMAKE WITH LIQUID PECTIN:

Measure the jelly to be recooked. For each quart of jelly measure 3/4 cup sugar, 2 tablespoons lemon juice, and 2 tablespoons liquid pectin. Bring jelly to boil over high heat. Quickly add the sugar, lemon juice and pectin and bring to a full rolling boil, stir constantly. Boil mixture hard for one minute. Remove jelly from the heat, skim, pour into clean hot containers, and seal.

Storage

To keep jellied products at their best, store in a dark, dry, cool place. Prepare only the quantity that you can use within a few months. Jellies lose their flavor in storage. If you make too much, do not store longer than one year. Remember, the shorter the storage time, the better the eating quality of your jellied fruit specialty.



Preserves, Conserves, Marmalades

Preserves contain large or whole pieces of fruit saturated by a clear syrup of medium to thick consistency. The tender fruit retains its original size, shape, flavor, and color. Conserves are jam-like mixtures of two or more fruits plus nuts or raisins or both. They are rich in flavor and have a thick, but not sticky or gummy consistency. Marmalades are mixtures of fruits, usually including citrus, suspended in a clear, translucent jelly. The fruit is cut in small pieces or slices.

The recipe included for you to make is Apple Conserve. If time permits, make a preserve and a marmalade. Remember, these products are processed using the boiling-water bath.

HOW TO: make apple conserve

Apple Conserve

(with powdered pectin)

4 1/2 cups finely chopped red apples
(about 3 pounds apples)

1/2 cup water

1/4 cup lemon juice

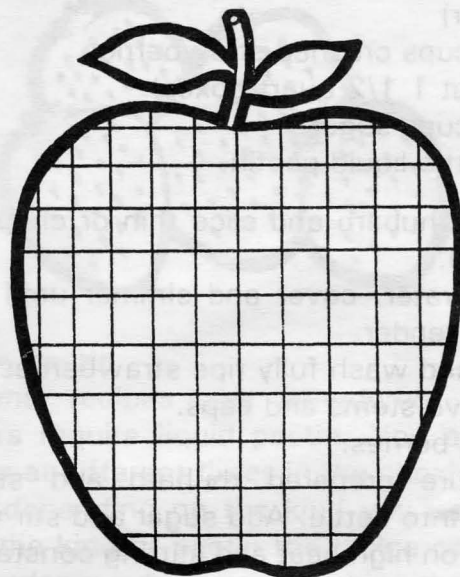
1/2 cup raisins

1 package powdered pectin

5 1/2 cups sugar

1/2 cup chopped nuts

- Select tart apples. Sort and wash.
- Remove stem and blossom ends and core, do NOT pare. Chop apples fine.
- Combine apples, water, lemon juice and raisins in a kettle.
- Add pectin and stir well.
- Place on high heat and while stirring constantly, bring quickly to a full rolling boil with bubbles over the entire surface.
- Add sugar, continue stirring, and heat again to a full rolling boil. Boil hard for 1 minute.
- Add nuts.



- Remove from heat. (If desired, add 3 or 4 drops of red food coloring.) Skim off foam.
- Fill containers using half-pint, standard home canning jars. Leave a 1/8-inch headspace.
- Wipe jar rims clean and seal with lids.
- Process, cool, label, evaluate and store the same as you did for the jam, page 11.

This recipe makes about 6 or 7 half-pint jars.

Remember: Softer jellies can sometimes be improved by re-cooking. It is best to re-cook only 4 to 6 cups of jelly at one time.

TO REMAKE WITH POWDERED PECTIN: Measure the jelly to be re-cooked. For each quart of jelly measure 1/4 cup sugar, 1/4 cup water, and 4 teaspoons powdered pectin. Mix the pectin and water and bring to boiling, stirring constantly to prevent scorching. Add the jelly and sugar. Stir thoroughly. Bring to a full rolling boil over high heat, stirring constantly. Boil mixture hard for 1/2 minute. Remove jelly from the heat, skim, pour into hot containers, and seal.

Making Jelly

In this chapter you will make jelly. In the Words To Know section of Chapter I you learned that jelly is clear. It is only made from the fruit juice. To do this you will learn how to extract the juice from the fruit.

Before preparing your jelly, here is some general information that will be useful to you.

Preparing the Fruit

Approximate amounts of fruits needed for the amount of juice called for are given in each recipe. However, the exact amount varies with the juiciness of the particular batch of fruit you use.

Wash all fruit in cold running water. Or, wash them in several changes of cold water, lifting them out of the water each time. Do not let fruit stand in the water.

Prepare the fruit for the juice extraction as the recipe tells you. The method is different with different kinds of fruit. Crush juicy berries and press the juice out without heating. Heat firm fruits to help start the flow of the juice.

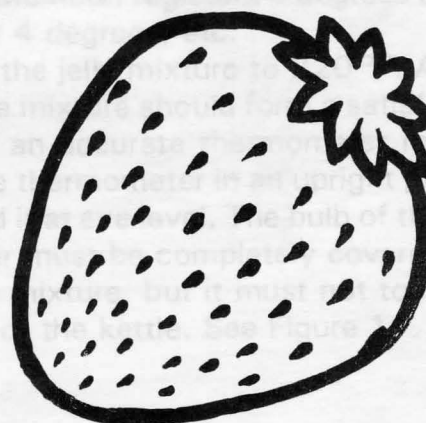
KNOW HOW: to Extract Juice

- Put the prepared fruit in a damp jelly bag, fruit press or a double layer of damp cheesecloth to extract the juice.
- The clearest jelly comes from juice that has dripped through a jelly bag without being pressed. But you can get a greater yield of juice by twisting the bag of fruit tightly and squeezing or pressing, or by using the fruit press. See Figure 9.
- Re-strain pressed juice through a double thickness of damp cheesecloth or a damp jelly bag. Do not squeeze the cloth or bag. Pour hot jelly mixture into sterile jars to within 1/4-inch of top, processing and label. Evaluate at your next meeting.



Figure 9

Blackberry or Strawberry Jelly is the recipe included in this chapter. Jelly can also be made from frozen concentrated juice. This will give a flavorful jelly and eliminates the extraction step. Both grape and orange concentrate work well. If blackberries or strawberries are not available, you can use another jelly recipe. If you have the time, make several jellies.



HOW TO: make jelly

Blackberry or Strawberry Jelly (with liquid pectin)

- 4 cups berry juice
(about 3 quart boxes of berries)
- 7 1/2 cups sugar
- 1 bottle liquid pectin

- Sort and wash fully ripe berries; remove any stems or caps.
 - Crush berries and extract juice, see page 13.
 - Measure juice into a kettle. Add pectin and stir well.
 - Place on high heat and while stirring constantly, bring quickly to a full rolling boil that cannot be stirred down.
 - Add sugar, continue stirring, and heat again to a full rolling boil.
 - Boil hard for 1 minute.
 - Remove from heat and skin off foam quickly. Pour jelly immediately into sterile containers and process. See Figure 10.
 - Label and evaluate your product.
- This recipe will make about 5 or 6 eight ounce glasses of jelly.



Figure 10

..... QUIZ TIME ANSWERS: 1. Refer to page 13

1. List 2 ways jelly differs from jams and preserves.

- A.
- B.

Jams and Jellies Without Added Pectin

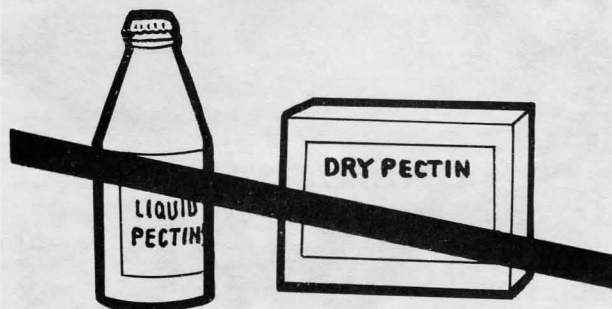
This is your last chapter on Jellied Fruit Specialties. Depending on the kind of fruit you use it could be your most challenging jelly or jam to make. The recipe included for making a jelly without added pectin is Apple Jelly. Apple is the fruit used because it is known to have a high pectin content. In Chapter I you tested for pectin content, page 6. Choose one or more other jam or jelly recipes to make without pectin if time permits. Testing for the pectin content may help you choose which fruits or combinations of fruits to use.

The following sections should be helpful in learning to make a jellied fruit specialty without added pectin:

Jellies made without added pectin require less sugar per cup of juice than those made with added pectin. Longer boiling is necessary to bring the mixture to the proper sugar concentration. So the yield of jelly per cup of juice is less than you make jelly without added pectin.

It is usually best to have part of the fruit underripe when you do not add pectin. Underripe fruit has a higher pectin content. The use of one-fourth underripe and three-fourths fully ripe fruit is generally recommended to give enough pectin for jelly.

Preserves, conserves, and marmalades made without added pectin require longer cooking than those with added pectin. The most reliable way to judge doneness is to use a thermometer. See the Temperature Test which follows. If you do not have a thermometer, cook products made without pectin until they have somewhat thickened. In judging thickness, allow for the additional thickening of the mixture as it cools. The Refrigerator Test suggested for jelly can be used when a thermometer is not available.



Testing Doneness

The biggest problem in making jellied fruit specialties without added pectin is how to know when the jelly is done. It is particularly important to remove the jelly mixture from the heat before it overcooks. You can sometimes recook an undercooked jelly to make a satisfactory product, but there is little you can do to improve an overcooked mixture. Signs of overcooking are:

- a change in color and
- the taste or odor of caramelized sugar.

Here are three methods to use for testing doneness. Of these, the temperature test is probably the most dependable.

Temperature Test

Before cooking the jelly, take the temperature of boiling water with a jelly, candy or deep-fat thermometer. If the thermometer registers 2 degrees below the normal boiling temperature of 212 °F, subtract 2 degrees from the temperature required. If the thermometer registers 4 degrees below, subtract 4 degrees, etc.

Cook the jelly mixture to 220 °F. At that point the mixture should form a satisfactory gel. For an accurate thermometer reading, have the thermometer in an upright position and read it at eye level. The bulb of the thermometer must be completely covered with the jelly mixture, but it must not touch the bottom of the kettle. See Figure 11.

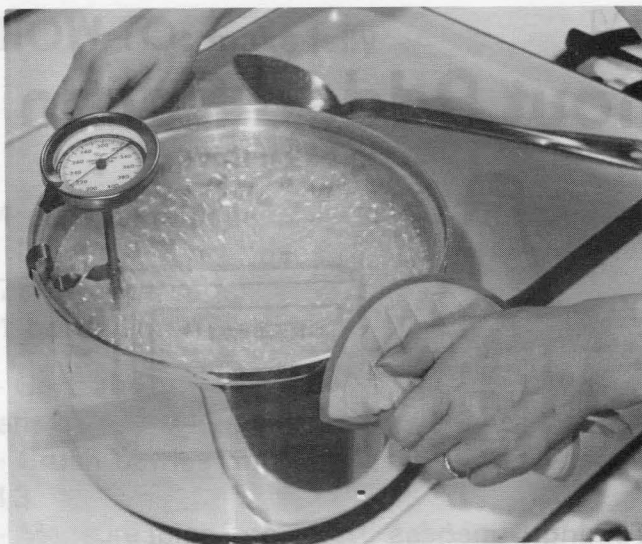


Figure 11

Spoon or Sheet Test

Dip a cool metal spoon in the boiling jelly mixture. Then raise it at least a foot above the kettle, out of the steam. Turn the spoon so the syrup runs off the side. If the syrup forms two drops that flow together and fall off the spoon as one sheet, the jelly should be done. This test is widely used. However, it is not entirely dependable. See Figure 12.

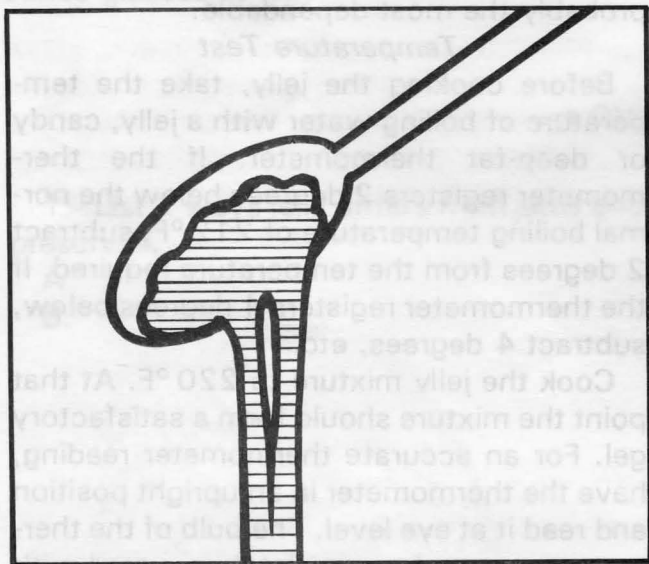
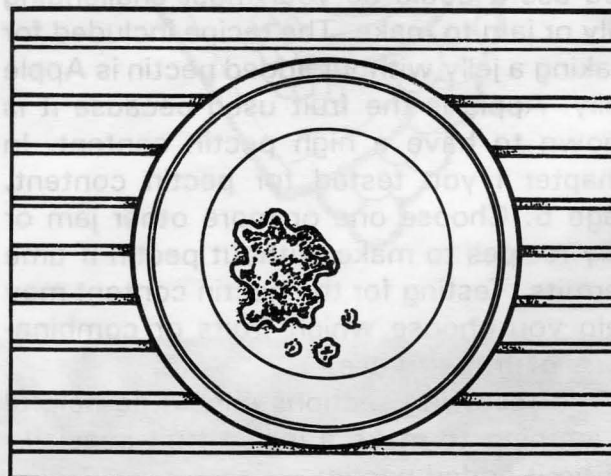


Figure 12

Refrigerator Test

Pour a small amount of boiling jelly on a cold plate and put it in the freezing compartment of your refrigerator for a few minutes. If the mixture gels, it should be done. During this test, remove the kettle of jelly mixture from the heat.



For Softer or Firmer Products

In products made **without** added pectin you shorten or lengthen the cooking time to make a softer or firmer jelly. This differs from jellies **with** added pectin since they can be made with more or less fruit juice in the recipe. Follow the directions below when you want a softer or firmer product.

In Products Made Without Added Pectin:

- For a softer jelly, **SHORTEN** the cooking time.
- For a firmer jelly, **LENGTHEN** the cooking time.

Softer jellies can sometimes be improved by recooking according to the directions below. It is best to recook only 4 to 6 cups of jelly at one time.

TO REMAKE WITHOUT ADDED PECTIN:

Heat the jelly to boiling and boil for a few minutes. Use one of the tests for doneness to determine just how long to cook it. Remove jelly from the heat, skim, pour into hot containers, and seal.

HOW TO: make jelly without added pectin

Apple Jelly

4 cups apple juice

(about 3 pounds apples and 3 cups water)

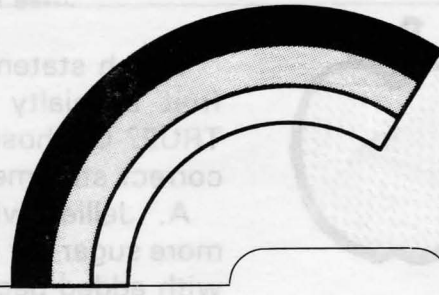
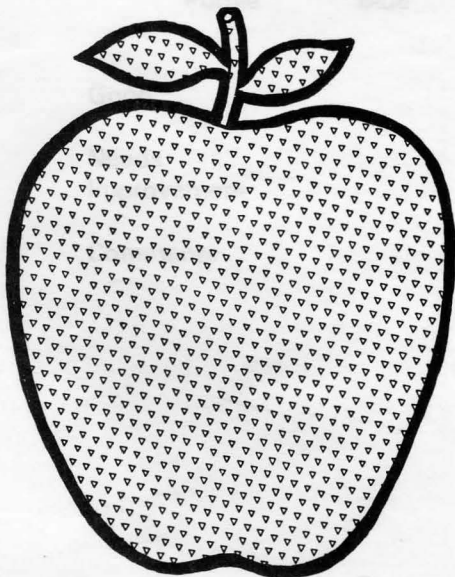
2 tablespoons strained lemon juice

(if desired)

3 cups sugar

- Select about one-fourth underripe and three-fourths fully ripe tart apples.
- Sort, wash, and remove stem and blossom ends. Do NOT pare or core.
- Cut apples into small pieces. Add water, cover and bring to a boil on high heat.
- Reduce heat and simmer for 20 to 25 minutes, or until apples are soft.
- Extract juice. (See page 13 if you need a review.)
- Measure apple juice into kettle. Add lemon juice and sugar, stir well.
- Boil over high heat to 8 ° above the boiling point of water for your area, or until jelly mixture sheets from a spoon.
- Remove from heat. Skim off foam quickly.
- Pour jelly immediately into hot containers.
- Seal with paraffin.
- Label and evaluate when cool.

This recipe will make 4 or 5 eight ounce glasses of jelly.



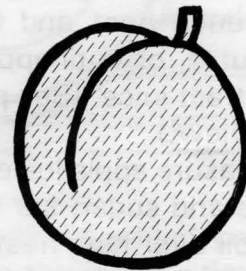
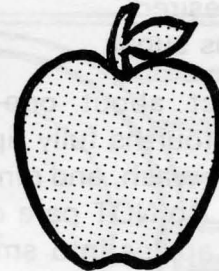
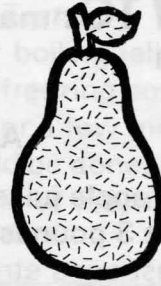
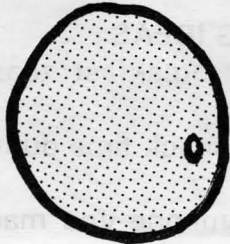
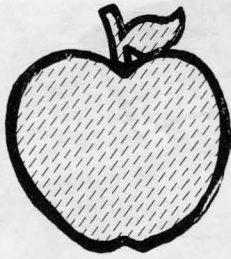
A RAINBOW OF SERVING IDEAS

- Serve them with your breakfast toast, English muffin or bagel.
- Serve with any meal or snack time during the day.
- Giving something to someone you made yourself is an extra-special gift. They make excellent holiday gifts. Make several kinds to include in a basket with a ribbon or bow around or on it.

In the rest of the space, write some other ideas on how you would use your jellied fruit specialties.

[illegible]

..... QUIZ TIME



Which statements about making a jellied fruit specialty **without** added pectin are **TRUE**? Of those that are false, what is the correct statement?

A. Jellies without added pectin require more sugar per cup of juice than those made with added pectin.

B. All fruit should be underripe.

C. Underripe fruit has a lower pectin content.

D. You can remake a jelly that is overcooked.

E. The Spoon or Sheet Test is the most reliable or testing doneness.

F. To make a softer or firmer product without added pectin:

1. Add more or less fruit juice.
2. Shorten cooking time for a firmer jelly.
3. Lengthen cooking time for a softer jelly.

Chapter VI for the correct statements.

ANSWERS: All statements are false. See

Name _____

County _____

SCORE CARD

25 Appearance
Uniform
Natural color
Clear liquid
No indication of spoilage

25 Pack
Full
Not crowded
Proper headspace
Air bubbles removed

25 Container
Clean
Standard jar
Appropriate closure
Properly labeled

25 Canned by recommended method

Ribbon Awarded:

Purple Blue Red White No Award

Good

Needs
Improvement

Comments